

What is claimed is:

1. A toner supplying apparatus for supplying a mixed fluid containing a toner and an air stream to a predetermined position, comprising:

a toner separating member communicating to a developing device to develop a latent image on an image bearing member, which separates the toner from the mixed fluid;

a separating side flow control mechanism disposed between the toner separating member and the developing device;

a wall to cover at least a portion of the flow control mechanism, having a clearance therebetween; and

an after-separation storage to store the toner separated from the mixed fluid.

2. The apparatus of claim 1, wherein the separating side flow control mechanism is a separating member side valve which comprises a movable member capable to reduce the air stream entering into the developing device and a shaft which the movable member can move based on.

3. The apparatus of claim 2, wherein the movable member is arranged to have a clearance of 0.1mm to 0.7mm between the wall and the movable member when an end of the movable member locates at a position closest to the wall.

4. The apparatus of claim 1, wherein the separating side flow control mechanism includes a bladed wheel having a plurality of blades, a screw or a gate valve.

5. The apparatus of claim 4, wherein the bladed wheel having blades, or the screw is arranged to have a clearance of 0.1mm to 0.7mm between the wall and the movable member when an end of the blades or an end of the screw locates at a position closest to the wall.

6. The apparatus of claim 1, wherein the separating side flow control mechanism is a bladed wheel having 4-12 blades.

7. The apparatus of claim 1, comprising at least two separating side flow control mechanisms.

8. The apparatus of claim 1, comprising at least two separating side flow control mechanisms in series.

9. The apparatus of claim 1, comprising:  
a mixing chamber for mixing the toner and the air stream;

a first supply member to supply the mixed fluid containing the toner and the air stream to the toner separating member;

a first supply path for guiding the mixed fluid to the toner separating member;

a second supply member to return the toner which was not separated at the toner separating member, to the mixing chamber; and

a second supply path for guiding the toner which was not separated to the mixing chamber.

10. The apparatus of claim 1, wherein the toner separating member is arranged near the developing device.

11. The apparatus of claim 1, further comprising a supply member to supply the toner separated from the mixed fluid to the separating side flow control mechanism, and the separating side flow control mechanism is driven at precisely or approximately the same time that the supply member is driven.

12. A toner supplying apparatus for feeding a mixed fluid containing a toner and an air stream from a toner storage through a first supply path, by a first supply member, which comprises: the toner storage including: a toner hopper; a mixing chamber; a storage side flow control mechanism disposed between the toner hopper and the mixing chamber; and a wall to cover at least a portion of the storage side flow control mechanism, having a clearance therebetween.

13. The apparatus of claim 12, wherein the storage side flow control mechanism comprises a movable member to capable to reduce the mixed fluid entering into the mixing chamber and a shaft which the movable member can move based on.

14. The apparatus of claim 13, wherein the movable member is arranged to have a clearance of 0.1mm to 0.7mm between the wall and the movable member when an end of the movable member locates at a position closest to the wall.

15. The apparatus of claim 12, wherein the storage side flow control mechanism includes a bladed wheel having a plurality of blades, a screw or a gate valve.

16. The apparatus of claim 15, wherein the bladed wheel having blades, or the screw is arranged to have a clearance of 0.1mm to 0.7mm between the wall and the movable member when an end of the blades or an end of the screw locates at a position closest to the wall.

17. The apparatus of claim 12, comprising at least two storage side flow control mechanisms.

18. The apparatus of claim 12, comprising:  
a mixing chamber for mixing the toner and the air

stream;

a first supply member to supply the mixed fluid containing the toner and the air stream to a toner separating member;

a first supply path for guiding the mixed fluid to the toner separating member;

a second supply member to return the toner which was not separated at the toner separating member, to the mixing chamber; and

a second supply path for guiding the toner which was not separated to the mixing chamber.

19. The apparatus of claim 18, wherein the toner separating member is arranged near a developing device.

20. The apparatus of claim 12, comprising: a supply member to supply the toner separated from the mixed fluid to the storage side flow control mechanism, and the storage side flow control mechanism is driven at precisely or approximately the same time that the supply member is driven.

21. The apparatus of claim 12, wherein the toner hopper comprises a sensor for detecting an amount of toner in the toner hopper, and the toner storage comprises a detachable toner container which supplies toner stored therein into the toner hopper when the sensor detects a

predetermined level of the amount of toner in the toner hopper.

22. A toner supplying apparatus for feeding a mixed fluid containing a toner and an air stream from a toner storage which is disposed at a distance from a developing device, to a predetermined position through a first supply path, by a first supply member, comprising:

a toner separating member which is disposed near the developing device, to communicate to the developing device and to separate the toner from the mixed fluid;

a first valve including a movable member covered by a wall, disposed between the toner separating member and the developing device; and

a second valve including a movable member covered by a wall, disposed between a toner hopper in the toner storage and a toner mixing chamber.

23. The apparatus of claim 22, wherein each of the first and second valves comprises a movable member capable to reduce the air stream entering into the developing device and a shaft which the movable member can move based on.

24. The apparatus of claim 23, wherein each of the first and second valves is arranged to have a clearance of 0.1mm to 0.7mm between the wall and the movable member when

an end of the movable member locates at a position closest to the wall.

25. The apparatus of claim 22, wherein each of the first and second valves includes a bladed wheel having a plurality of blades, a screw or a gate valve.

26. The apparatus of claim 25, wherein the bladed wheel having blades, or the screw is arranged to have a clearance of 0.1mm to 0.7mm between the wall and the movable member when an end of the blades or an end of the screw locates at a position closest to the wall.

27. The apparatus of claim 22, comprising at least two first valves each including the movable member, and at least two second valves each including the movable member.

28. The apparatus of claim 22, comprising at least two first valves in series, and at least two second valves in series.

29. An image forming apparatus comprising:  
a photoreceptor;  
a developing device to develop a latent image on the photoreceptor with a toner;  
a transferring device to transfer developed toner to an image support;

a fixing device to fix the toner on the image support; and

a toner supplying apparatus as defined in claim 1.